

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended): A system for assisting the regeneration of depollution means ~~(1)~~ integrated in an exhaust line ~~(3)~~ of a motor vehicle diesel engine ~~(4)~~, in which the engine is associated with a turbocharger ~~(5, 6)~~ and with common rail feed means ~~(7)~~ for injecting fuel into the cylinders of the engine in at least one post-injection, and adapted to implement, at constant torque, at least two regeneration strategies ~~(10, 11)~~ at a first level and at a second level, depending on different engine operation control parameters, in order to obtain different temperature levels in the exhaust line, the temperature level corresponding to the second level strategy ~~(10)~~ being higher than the temperature level corresponding to the first level ~~(11)~~, the system including ~~being characterized in that it includes~~ acquisition means ~~(9)~~ for acquiring the temperature level in the exhaust line, comparator means ~~(8)~~ for comparing said temperature level with a safety threshold value for the turbine ~~(5)~~ of the turbocharger so that in the event of said threshold value being exceeded while applying the second level strategy ~~(10)~~, the feed means ~~(7)~~ are controlled so as to regulate at least one of the engine operation control parameters progressively so as to reduce the temperature level in the exhaust line ~~(3)~~, and if said temperature level does not drop below the threshold value at the end of a predetermined first time period, the feed means ~~(7)~~ are controlled to switch over to the first level strategy, and if the temperature level in the exhaust line still does not drop below the safety threshold value at the end of a second time period, the feed means ~~(7)~~ are controlled to stop the regeneration strategy.

2. (Currently amended): A system according to claim 1,
~~wherein characterized in that~~ the feed means ~~(7)~~ are adapted to
implement two successive post-injections.

3. (Currently amended): A system according to claim 2,
~~wherein characterized in that~~ during regulation, the feed means ~~(7)~~
are adapted to reduce progressively the flow rate of fuel during
the second post-injection.

4. (Currently amended): A system according to claim 3,
~~wherein characterized in that~~ the feed means ~~(7)~~ are adapted to reduce
the flow rate of the second post-injection by using a correction
factor lying in the range 0 to 1 and determined on the basis of the
difference between the temperature level acquired from the exhaust
line and the safety threshold value.

5. (Currently amended): A system according to claim 4,
~~wherein characterized in that~~ the correction factor is determined
by a PI type regulator ~~(13)~~ having non-linear gain.

6. (Currently amended): A system according to ~~any preceding claim~~
~~1, wherein, characterized in that~~ the temperature level acquisition
means comprise at least one temperature sensor ~~(9)~~.

7. (Currently amended): A system according to ~~any preceding claim~~
~~1, wherein, characterized in that~~ the safety threshold value is
calibratable.

8. (Currently amended): A system according to ~~any preceding claim~~
~~1, wherein, characterized in that~~ the depollution means ~~(1)~~ comprise
a particle filter.

9. (Currently amended): A system according to ~~any preceding claim~~

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~~1, wherein, characterized in that~~ the depollution means ~~(1)~~ comprise a NOx trap.

10. (Currently amended): A system according to ~~any preceding claim 1, wherein, characterized in that~~ the depollution means ~~(1)~~ comprise a SOx trap.

11. (Currently amended): A system according to ~~any preceding claim 1, wherein, characterized in that~~ the depollution means ~~(1)~~ comprise an oxidation catalyst.

12. (Currently amended): A system according to ~~any preceding claim 1, wherein, characterized in that~~ the fuel includes an additive for being deposited, together with the particles with which it is mixed, on the depollution means in order to facilitate regeneration thereof.

13. (Currently amended): A system according to claim 1, wherein~~any one of claims 1 to 11, characterized in that~~ the fuel includes an additive forming a NOx trap.